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AN
 Inaugural Dissertation
 ON THE
 COLIC,
 SUBMITTED TO THE EXAMINATION OF
 THE REV. JOHN EWING, S. S. T. P. PROVOST,
 THE
 TRUSTEES AND MEDICAL PROFESSORS,
 OF THE
 UNIVERSITY OF PENNSYLVANIA.

On the twenty-second day of May, 1798,
 FOR THE DEGREE OF DOCTOR OF MEDICINE.

~~~~~  
 BY WILLIAM WEBB, OF VIRGINIA,  
*Member of the Philadelphia Medical Society.*

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 To think is to theorize ; and happy the patient whose
 physician possesses the best theory. DARWIN.

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# DEDICATION.

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TO

*BENJAMIN RUSH, M. D.*

PROFESSOR OF THE INSTITUTES AND OF  
CLINICAL MEDICINE,

IN THE

University of Pennsylvania.

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PERMIT ME, SIR,

TO dedicate this dissertation to you, as a slender testimony of my respect; and at the same time to return you my unfeigned thanks for the many favours you have conferred upon me.

The many invaluable advantages which I have received in common with others, from your public lectures; would be alone sufficient to perpetuate a sense of gratitude to you; but how vivid must this ever remain, whilst I continue to reflect, that to your particular attention and superior judgment,

(in my late illness) I am indebted for my present existence.

I am now about to leave this University, suffer me then to bid you adieu ; may prosperity and peace make your future days as happy as your past have been useful ; whilst I, impressed with your unbounded kindness, will ever remain,

Your most obedient,  
most affectionate friend,  
WILLIAM WEBB.



# INTRODUCTION.

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I HAVE chosen for an Inaugural Dissertation that state of *Intestinal Disease* known by the name of Colic: not that I expect to communicate any thing new to the public; but to avoid the discussion of an experimental subject, which a late severe indisposition would not suffer me to attempt.

It was my intention to have written fully on every stage of Colic, but this I discovered would involve me in a lengthy examination of every affection of the bowels; not only in every stage of Colic, but also in Dysentery, Diarrhœa and Cholera Morbus; as they are all the affections of the intestines and not characterized by any appropriate, or exclusive set of symptoms. I shall therefore confine myself to such affections of the intestines, as have been described by authors, under the name of Colic, Colica Pictonum, and Bilious Colic; to which I shall add some symptoms of Colic not hitherto taken notice of.

This thesis I perceive will not be exempted from inaccuracies, but this does not discourage me; for perfection is to be found in but few Inaugural dissertations. The indulgent reader will make every possible allowance, when he considers that it is not wholly the fruits of my own experience; but conclusions principally drawn from the opinion of others. I write to diffuse the little knowledge I have acquired of the disorder, with an intention of doing good; but should it not have the desired effect, I hope the purity of the motive will pardon the egression.

# Inaugural Dissertation.

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## HISTORY OF COLIC.

IT is probable that the word colic first took its name, from a supposition that the intestine, called Colon, was only affected; but now it is known that one of the intestines can seldom be much affected without the whole of the alimentary canal being more or less disordered\*: The word colic, might with propriety be blotted out of the annals of medicine; but as custom has established it as a word to express certain symptoms or stages of an intestinal disorder, it will be perhaps proper to retain it.

\* This sympathy Dr. Darwin supposes to arise from an association acquired by habit (vid. *Zoonomia*, part 1, sect. xxxv.) Mr. Hunter supposes it to arise from a continuation of surface (vid. *Hunter on the blood*, &c. page 7.) various other opinions have been formed by different authors.

The colic I shall then define to be that state of the bowels, attended with a pain in the lower belly and other symptoms, which will hereafter be described.

The Colic is not confined to any particular place, climate or season of the year, though it is most common in warm climates, or warm seasons of cold climates. It occurs at different seasons of the year, from a change of weather ; from suddenly refrigerating the body after being much heated ; or from suddenly entering a warm room, drinking warm liquors and the like, after being much exposed to the cold ; but it most commonly occurs as the effect of marsh miasmata. Hence it mostly prevails in warm climates and in places subject to intermitting and remitting fevers.

#### OF THE DIFFERENT STAGES OF COLIC.

The Colic may be divided into four stages.

1. The Colic attended with partial affection or inflammation ; which I shall call inflammatory Colic†.

† Inflammation is not always present in Colic. Where the disorder is suddenly brought on and the person quickly relieved ; in most of such cases no inflammation takes place ; and there are instances where the force of stimulus is so great, acting immedi-

2. The Colic attended with general affection of the bowels and particularly with an inverted peristaltic motion. This has been called the Iliac passion†.

3. The Colic attended with a paralysis or great torpor of the intestines, so that they become insensible to the most powerful stimulants; and for want of power, the vermicular motion is suspended‡. This I shall call the paralytic state of Colic.

4. The Colic attended with the discharge of much bile, most commonly by vomiting, but sometimes

ately upon the intestines, as to exceed the inflammatory action. This is perhaps one reason why inflammation has not been more frequently discovered in the intestines of persons who die of the complaint.

† The Colica Pictonum (which got its name from Riverius because it particularly afflicted painters; and which is generally supposed to be produced by lead) differs not materially from Colics produced from other causes; and therefore does not deserve to be distinguished in a separate class.

‡ This stage of Colic, as far as I have seen, has not been particularly described. Most authors that have written on Colic, mention the uncertain operations of cathartic medicines; but few have considered a torpid state of the intestines as one of the causes. In this stage it is probable the intestines have lost their excitability from the excessive force of stimuli immediately applied to them. This I can as readily conceive as a palsy in a limb from an excess of exercise (vide Darwin's Zoonomia part i. sect. xxxiv. r. 7.) an apoplexy in the brain or a prostration of strength in the blood-vessels, from the excessive force of stimulus (vide Dr. Rush's Inquiries vol. 4, p. 155 and 170.



by purging ; which has given it the name of bilious Colic.

## OF THE SYMPTOMS OF COLIC.

### 1. *Of the Symptoms of the First Stage of Colic.*

This is seldom attended with any other symptom, than costiveness, with a pain in the lower belly. It is seldom fixed and pungent in one part, but a painful distention is in some measure spread over the whole of the abdomen : and particularly with a sense of twisting about the umbilicus. The muscles of the abdomen are often considerably contracted, and this in separate portions, giving the appearance of a bag full of round balls\*. The fibres of the colon likewise become contracted in such a manner that the fæces are often formed into indurated masses, termed by writers, scybala ; and the valve of the Colon often becomes entirely closed, so that none of the fæces can pass ; which readily accounts for the costive state of the bowels. In such cases a vomiting generally attends the complaint.

### 2. *Of the Symptoms of the Second Stage of Colic.*

The pain in the lower belly and a costive state of the intestines have already been mentioned as the

\* Cullen.

pathognomonic signs of Colic ; but when the disorder proves more violent, other additional symptoms appear. The peristaltic motion is inverted, through the whole length of the alimentary canal, and in such a manner that the contents of the great guts, and therefore stercoraceous matter is thrown up by vomiting, and the same inversion appears clearly from this ; that what is thrown into the rectum by glyster is again thrown out by the mouth. This is the Iliac passion, which differs from the first stage (as Dr. Cullen has justly said) only in degree\*.

Some other symptoms than those described are said to occur in Colics produced by lead, such as a constriction of the anus, a paralysis of the extremities and affections of the nerves and brain†.

### 3. *Of the Symptoms of the Third Stage of Colic.*

The symptoms of this stage of Colic although apparently milder, than those last described, are in effect not less dangerous. They are, a general uneasiness, attended with languor and depression of spirits ; a dull, heavy, painful sensation over all the intestines ; a want of appetite ; a nausea and incli-

\* Vide Dr. Cullen's first lines of practice, vol. 4 page 20.

† Vide Hillary on the diseases of Barbadoes page 183. Clark, Mosely, Hunter and others have taken notice of the paralysis of the extremities as a symptom of Colic.

nation to vomit, and a constant inclination to go to stool; though the efforts are for the most part ineffectual :

The same costiveness prevails in this, as in other stages of Colic, although the most powerful cathartic medicines are retained upon the stomach : and yet there appears to be no obstruction in the bowels which is clearly seen by the fæces, when a passage is procured ; they being thinner than natural, and seldom containing any scybala.

In most stages of Colic the pulse is but little altered, though there is some variation ; being sometimes full, frequent and tense ; sometimes tense and frequent, but not full : whilst at other times it is slow, intermitting, depressed and scarcely to be perceived.

#### 4. *Of the Symptoms of the Fourth Stage of Colic\**.

The symptoms of this stage or Bilious Colic are well described by Sauvages, whose description

\* Although all these stages do not often terminate in one another as they are arranged, and of course are not apt to occur in a patient in the same illness ; yet the symptoms are so nearly allied, and so often connected, that they cannot otherways than be considered as one and the same disease ; and therefore with propriety be divided into different stages instead of different diseases,



Wallis has imitated in his notes on Sydenham\*. His words are “ A hoarseness, cardialgia, loathing  
 “ of food, bilious, porraceous vomiting, hiccough,  
 “ the urine small in quantity and deep coloured,  
 “ with a costive state of the bowels in general,  
 “ though not always, for sometimes they are frequent and bilious stools ; but the pain affects the  
 “ small bowels, the urine flows freely ; the head is  
 “ affected with vertigo ; the pulse small, neither  
 “ hard nor tense, but frequent, and is often succeeded by jaundice.”

*Of the Cause and Connection which exist between the different Stages of Colic.*

The alimentary canal, like other parts of the body is liable to be affected in different ways according to the different degrees of excitability and the force of stimuli applied. Thus if a person habituated to Colic†, be exposed to much cold, his digestion will be impeded and the excitability of the intestines will be accumulated ; in this state of the system, the heat of a room, which at another time would produce

\* Vid. Wallis' Sydenham, vol. 1. page 276.

† If the intestines have not been subject to Colic or other affections, the increased excitement is as apt to terminate upon the pleura, or any other part as upon intestines.

no bad effect, will now produce inflammation\*, and its consequences, such as pain, costiveness and the like.

If in the above state of the system, the room be still warmer, a greater degree of excitement will be produced; the whole of the intestines will be affected, and an inverted peristaltic motion will be the effect†.

If the stimulus be still greater; the action of the intestines becomes prostrated and the fæces are retained from a cessation of the peristaltic motion‡; which is found necessary to protrude them.

The intestines in this stage become so insensible to the action of other stimulants, that the most powerful cathartic medicines have not the desired effect§. (Page 9 & 12.) It may be produced by any vi-

\* Darwin.

† In this case a quantity of water is thrown up by vomiting, although the patient drinks but little. Dr. Darwin thinks it possible that this superabundance of water may be absorbed from the atmosphere by the increased action of the cutaneous absorbents, and then retrograded by the inverted motion of the intestinal absorbents (vid. Zoonomia, part 1, sect. xxxv. 15.)

‡ If the retention of the fæces depend not upon obstruction, it must be owing to a want of vermicular motion (vid. page 9.)

§ An ingenious friend of mine informed me that he gave a patient (whose bowels were in this torpid state) 52 grains of emetic

olent stimulus, acting upon the increased excitability ; but marsh miasmata may be considered as the most common remote cause. Hence it seldom appears, but in the fall season, and in situations subject to intermitting and remitting fevers.

If, in the above state of the system, the patient happens to be of a bilious habit, and particularly, if he happens to be in a place subject to bilious fever, a greater degree of excitement will be produced ; but, in most cases, affects principally, the blood-vessels, and produce a bilious fever, which after no great length of time, will terminate in a bilious colic.

Dr. Sydenham says, that the Bilious Colic often succeeds inveterate dysenteries, and when it did not, it generally arose from a fever which affected

tartar and 85 of ipecacuanha, within the course of thirty-six hours, without producing a single evacuation, either by vomit or stool : and I once exhibited 50 grains of calomel and as many of jalap, in the course of twenty-four hours, with no better success ; which after two or three bleedings, a passage by stool, was procured by only 30 grains of jalap. The fæces when discharged were thinner than natural, and had no scybala among them.

The intestines must certainly have been in this paralytic state, when Dr. Chisholm gave a patient 50 grains of calomel at a single dose.

the patient only a few hours, and ordinarily terminated in this disease\* : but according to my own experience, I cannot say this was altogether the case. The disorder generally commenced with a fever, which after no determinate length of time abated, and the symptoms of colic appeared, so that it seemed as if the excitement was translated from the blood-vessels to the intestines ; but the convulsive action of the pulse and some other symptoms of fever generally appeared. I once saw a patient with this colic, who had been previously affected for three days with a bilious fever : the violence of the fever suddenly subsided, and he was attacked with pains in his bowels, a perpetual vomiting of bilious matter ; and coldness on the surface of his body and in his extremities, his neck and breast were the only parts that could be perceived to be warm, yet he complained of the most violent heat within ; but the most distressing symptom was the difficulty of his breathing ; for which he was bled once or twice and was relieved.

The irregular tremulous action of his pulse, and the internal heat, indicated the presence of fever in this case ; as it does in most other cases of bilious colic.

\* Vide Wallis' Sydenham, vol. 1, page 174.

There is but one remote cause of fever\* ; and there is but one remote cause of colic, and that is stimulus. Heat alternating with cold, marsh miasmata ; the fumes of lead and other poisons ; passions of the mind, and the like, all act by a stimulating power producing colic. Hence it is that the symptoms of the colic are the same, differing only in degree, although the causes which produce them are innumerable.

The paralysis of the extremities, in colic, has mostly been ascribed to the effects of lead ; but this effect can only be produced from the excessive force of stimulus, or the length of time for which it is applied ; this appears clearly from its being produced from other causes than that of lead† ; and often from some of the other causes which produce colic, as marsh miasmata‡, vicissitudes of the weather and the like : and if the opinion of Dr. Clarke be well

\* Vide Dr. Rush's Inquiries, vol. 4, page 132.

† A large dose of opium, night shade, or any other powerful stimulant, will produce a paralysis in the extremities by being taken into the stomach. Hence poisons generally produce apoplexy, when they destroy life.

‡ Mosely in his treatise on topical diseases, says that the colica pictonum was epidemical in certain situations at certain seasons of the year ; from this I would rather suppose it was produced from marsh miasmata than lead ; for the effects of lead are the same at all seasons of the year.



founded, other colics in warm climates than those produced from lead, are attended with paralyfis of the extremities\*. He says, that the colic, which most frequently occurred during his two voyages to India, either resembled the bilious colic of Sydenham, or the colica pictonum, dry belly-ach and nervous colic of other authors. He says that the paralyfis of the extremities was a common symptom of those colics; and he considered the remote cause to be the sudden refrigeration of the body whilst over-heated.

#### OF THE CURE OF COLIC.

The remedies which have been recommended in the cure of Colic, are very numerous; but in the present improved state of medicine, I conceive they may be reduced to a very few, such as,

1. Blood-letting. This remedy has been considered by some as valuable, whilst others have taken no notice of it, in the cure of Colic. Dr. Cullen recommends bleeding in the first stage†; Wallis in the second‡; Sydenham in the fourth§; and the

\* Vide Clark on the diseases of long voyages, p. 396.

† Vide Cullen's first lines of practice, vol. 4, p. 20.

‡ Vide Wallis' Sydenham, vol. 2, page 69.

§ ——— ——— page 277.

advantage I have derived from it warrants me in recommending it in the third stage of Colic : but as some regard should be paid to the quantity of blood to be drawn in the different stages there may be some advantage derived from a discrimination.

1. Stage. As the intestines are not always inflamed so blood-letting is not always necessary ; but in paroxysms of Colic, instantaneous relief has been procured by bleeding, even where no inflammation had taken place ; where large doses of laudanum had proved ineffectual.

Blood-letting diminishes the irritation and pain of the intestines, and thereby prevents those constrictions, which are so often the cause of costiveness ; and if timely used, prevents that inverted motion of the intestines, which I have called the second stage.

The quantity of blood to be drawn should depend upon the violence of the symptoms. In most cases, in the inflammatory stage, from 10 to 20 ounces may be taken at a time, which should be repeated as often as the symptoms require it. It never fails to assist the operation of cathartics, and ease the pain in the bowels if sufficiently used.

2. In the Iliac passion blood-letting acts as an anodyne ; and the effects are not so different from the

effects of opium as has been imagined : blood-letting by abstracting the stimulus of blood from the intestines diminishes the excitement. Opium, by increasing the force of stimuli overcomes the excitement, and the same effects are produced. In both cases the excitement and the excitability are equalized\*. The preference to blood-letting in this case is evident ; for by bleeding we only lessen the bulk of blood, which is too great a stimulus for the vessels which carry it. By opium we endanger the life of the part ; for it is from the excessive force of stimuli, that inflammation terminates in mortification†.

In a case of this stage of colic, where the peristaltic motion of the intestines was inverted, which was evinced from the stercoraceous vomiting ; and, at the same time the stomach was so irritable, that nothing could be made to remain upon it. The patient was relieved in two days by three bleedings.

Small quantities of blood taken at a time, and frequently repeated, will in general be found most adviseable in this stage of colic ; but as the symptoms often differ, the rule laid down by Dr. Rush, should always be remembered. “ In cases” says the Doctor, “ where the pulse acts with force and

\* Vide Dr. Rush’s manuscript lectures.

† Vide Bell, Cullen, Hunter and Darwin.



“ freedom, from 10 to 20 ounces of blood may be  
 “ taken at once ; but in cases of great indirect de-  
 “ bility, where the pulse is depressed\*, it will be bet-  
 “ ter to take away but a few ounces at the time, and  
 “ to repeat it three or four times a day†.”

3. In cases of the paralytic state of colic, the action of the intestines is supposed to be overcome by the excessive force of stimuli. In this case, by small bleedings the quantity of blood sent to the intestines is gradually diminished, and the force of stimuli being lessened, the action of the intestines is again restored. Six or eight ounces of blood may be taken at once, and this should be repeated three or four times a day, according to the effects that are produced‡. It proves more beneficial than the same quantity of blood taken at larger bleedings.

The seeming debility of the patients in this stage of colic, often makes superficial observers object to the use of the lancet : I shall ever lament the death

\* In a slow intermitting pulse, or a frequent tense pulse, where it is not full, small and repeated bleedings should be preferred, to a single bleeding which is large.

† Vide Dr. Rush's Inquiries, vol. 4. page 239.

‡ Where the pulse is preternaturally slow, and becomes quicker and more regular, or where the pulse is quicker than natural, and becomes slower and fuller by bleeding, we may be confident the effects are salutary.

of a young man, who was affected with this colic, and whose friends persuaded him against the use of the lancet ; from their supposing he was too weak to bear the loss of more blood. Eighteen ounces had been taken at three bleedings, with the appearance of advantage ; but he died, for the want of more bleeding ! altho' many other measures were taken for his recovery. In this case some stools were procured by strong cathartic medicines, which shewed no signs of scybala.

4. In no disorder is blood-letting more efficacious than in the bilious colic. Many lives have been saved by this remedy ; which would inevitably be lost without it : witness the case (in page 16.) His difficult breathing was removed ; his vomiting stopped, and the heat was restored to every part of his body.

In the bilious stage of colic, large bleedings will mostly be required ; but the symptoms should indicate the quantity to be taken\*.

## 2. PURGING.

This remedy has mostly been depended upon in the cure of colic ; but much mischief has been

\* Vid. page 20 & 21.

done by the untimely use of this class of medicines. The irritation that must be produced by the stimulant properties of the medicine, acting upon a part already highly excited, must deter any practitioner from the use of cathartics at such a time, did not a supposition arise, that a passage must be procured, and that could only be done by the use of such medicine\*. Besides, by the dependence on purgatives, the disease has been prolonged for 20 or 30 days, whereas, had the excitement been lessened by the previous use of the lancet, the cure might have been performed in half of the time.

The uncertain success in the cure of colic by the use of purgatives, is no doubt the cause of the different opinions, as to the time to exhibit them, and quality of purges that should be used†. Sydenham was certainly well acquainted with the cure of the disease, when he “bled freely” before he exhibited any medicine‡.

The most judicious method of curing the colic, is first to diminish the excitement by blood-letting;

\* In an obstruction of my bowels which had continued for three days, a passage was procured by the loss of 12 ounces of blood, which I took to ease the head-ach. I had taken no kind of medicine, neither had I made any material change in my diet.

† Vide Hillary, Clark, Moseley, Hunter and others.

‡ Vide Wallis' Sydenham, vol. 2, page 277.

and afterwards the bowels may be more easily opened by purges. The kind of purges to be preferred must depend upon the excited state of the system; when this is equalized with the excitability, the mildest laxatives will answer the purpose. Thus opium, which is of an astringent quality, has been said to assist the operation of cathartics in colic\*.

When the bowels are once opened, they should be preserved in this situation, either by a proper accommodation of diet, by the farther use of laxatives, or by glysters.

### 3. GLYSTERS.

Glysters have been highly recommended in this disease, and when purges are rejected or become inexpedient, they may be used with advantage. Cold water glysters have of late been highly recommended in the colic.

Dr. Cullen recommends the injection of tobacco smoke, and mechanical dilatation in the cure of colic†; but if the lancet be used with sufficient freedom, I doubt if these harsh remedies would ever be found necessary. The most violent spasm I ever

\* Vid. page 20.

† Vid, Cullen's first lines of practice, vol. 4, p. 31, 32 & 35.

saw was overcome by three bleedings ; when cathartics, glysters, and injections of tobacco smoke had all failed.

#### 4. STIMULANTS OR EXCITANTS.

1. Mercury. This has been of late highly recommended in the cure of colic. In violent cases of colic, Dr. Clark made three pills, from a mass of 10 grains of calomel and 2 of opium ; one of which he gave every half hour till the pain abated ; after which he exhibited a purge\*. The same author takes notice of a violent case of colic, produced by lead, which was cured by a salivation\*.

2. Hyosciamus and opium have both been highly recommended in the cure of colic. They act either by overcoming the excitement, by increasing the force of stimuli, or, by increasing the excitement when below par, to the state of equilibrium†. The first intention is to be answered by a large dose of the medicine, which should not be repeated ; the second by giving small doses, and repeating them as soon as the effect of the medicine is perceived to decline‡. In using these medicines, the

\* Vide Clark on the diseases of long voyages, page 398.

† Vide Dr. Rush's manuscript lectures.

‡ Vide Darwin's Zoonomia, part 1, sect. xii. 7.

last intention will be found more advisable than the first ; for by the means of the lancet the first is effected with more safety and certainty.

3. Other medicines than those mentioned, have been prescribed by authors for the cure of colic ; such as the sulphate of zinc, acetate of lead, gum guaiacum, &c. for the good effects of which, Moseley, Hillary, Hunter, Linn, Clark, and others who have written on the disorder may be consulted.

#### 5. BLISTERS.

These have been recommended by Cullen, Clark and others. They may be used with advantage in some stages of colic. They act by creating an excitement on the surface of the body, and thereby diminishing the excitement in the intestines.

In the convalescent state of colic, exercise on horseback ; the peruvian bark, and other tonics, will be found equally necessary, as in convalescents from fever.

In cases of the chronic state of colic, appearing in irregular paroxysms, brought on by a sedentary life ; by bad air ; from lead or other poisons. Exer-



cise on horseback ; country air ; an accommodation of cloathing to the weather ; the avoiding of night air, and all excesses ; together with the occasionally letting a little blood, as the pulse may indicate, will generally perfect a cure.





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